

REMARKS

Applicant respectfully requests Examiner acknowledge receipt of foreign priority document, Japanese Application No. JP2002-198739, that has been submitted pursuant to 35 U.S.C. § 119.

As requested by Examiner, the Title has been amended to “MAGNETIC RECORDING MEDIUM POSSESSING A MAGNETIC LAYER WITH A COLUMNAR STRUCTURE.”

Applicant respectfully requests reconsideration of Examiner’s rejection of claim 1 Under 35 U.S.C. §102(b). In rejecting claim 1, Examiner asserts that *Ishida et al.* (U.S. Patent No. 5,554,440) teaches Applicants invention. The *Ishida* patent is directed to achieving an improved high density recording/reproducing magnetic tape. However, *Ishida* fails to teach or suggest Applicants currently claimed invention.

The magnetic recording medium of the present invention is extremely advantageous in effectively utilizing high reproduction sensitivity for MR or GMR heads. While *Ishida* discloses a relationship between the incidence angles of the magnetic particles, it actually teaches away from Applicants use of a thinner magnetic layer. Applicants invention is directed to the criticality of the range of angles disposed magnetic particles take on wherein the magnetic layer is deposited to a thickness of 50nm or less. (See Table 1 on page 26 of Applicants disclosure). *Ishida* actually teaches away from applicants NOW specified

thickness for the magnetic layer thickness. Specifically, see column 14 at lines 57-6 which states that the magnetic layer is "preferably from 50nm to 150 nm."

Applicant has identified the criticality of the range of magnetic particle angles that maximize the electromagnetic conversion characteristic (CNR) for a thin magnetic tape which is wherein the magnetic layer is 50nm or less. See, for example, Figure 6 of Applicants disclosure which compares the much narrower critical range required of such a device compared to the thicker 150nm disclosed in *Ishida*. This is not to mention the fact that the *Ishida* reference teaches the incidence angle of magnetic material application, and not the angle of actual magnetic particle deposition, as currently claimed. Therefore, Applicant respectfully requests Examiner withdraw his 35 U.S.C. §102 rejection, and place this claim in condition for allowance.

Applicant respectfully requests reconsideration of Examiner's rejection of claim 1 Under 35 U.S.C. §103(a). In rejecting claim 1, Examiner asserts that *Ishida et al.* (U.S. Patent No. 5,554,440) teaches Applicants invention in view of *Kobayashi et al.* (U.S. Patent No. 5,453,886). Applicant reiterates the arguments above as against *Ishida*, and further note that *Kobayashi* fails to teach or suggest Applicants invention. Examiner cites column 9 of the *Kobayashi* reference as teaching a portion of Applicants currently claimed range. Applicant notes however, that the angle taught in this portion of the *Kobayashi* patent is the average angle of a deposited magnetic particle in relation to the non-magnetic substrate. Column 9, lines 13 – 18, state: "For high coercive force and high residual magnetic density, the angle A between the average growth direction of columnar grains and the substrate major surface

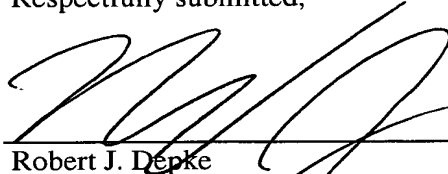
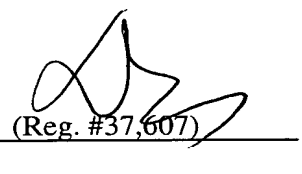
should preferably range from ... 50 to 70 [degrees]." Applicant notes that the average angle in relation to the substrate has no direct correlation to the **difference** in angles between an initial deposition and a final deposition. More specifically, the average growth direction relative to the substrate major surface is dependent upon a number of things, including the actual start angle, the linear time-based deposition of the materials, the final incident angle, the angle of the substrate to the evaporation source, etc. Therefore, the range disclosed in *Kobayashi* cannot be used to teach or suggest any portion of the range disclosed in Applicants currently claimed invention, as they are directed to substantively different angle measurements. Therefore, Applicant respectfully requests Examiner withdraw the 35 U.S.C. §103 rejection, and place this claim in condition for allowance.

In summary, applicant respectfully submits that all claims now stand in condition for allowance.

Date: _____

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Respectfully submitted,

 
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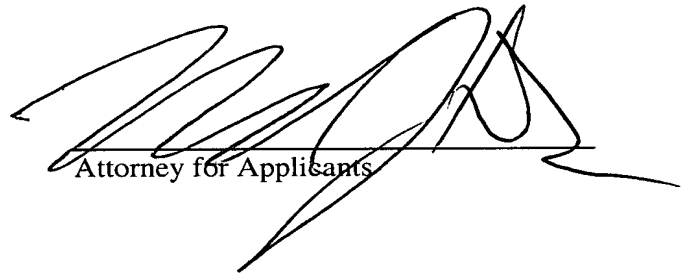
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Reply to Office Action of August 16, 2004



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